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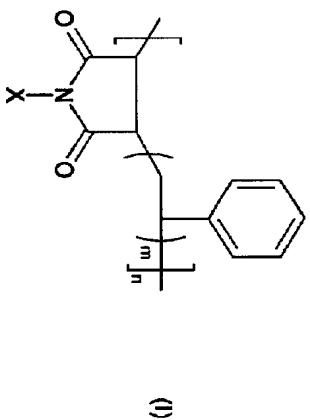
DE-A 10251294

<b>2004-402323/38</b> <b>EMS-CHEM AG</b> <b>2002.11.04 2002-1051294(+2002DE-1051294) (2004.05.19) C08L  <i>7700, C08J 5/04</i></b>	<b>A23 (A13 A95)</b> <b>INVE 2002.11.04</b> <b>*DE 10251294-A1</b> <b>A(4-C1A, 4-D8, 5-F1B1, 5F1B2, 8-R1, 10-C3)</b>
<p><b>Polyamide molding composition for producing high gloss, rigid articles, useful particularly as automobile components, is mixture of semicrystalline linear, amorphous and branched graft polyamides, plus filler</b></p> <p><b>C2004-150952</b></p> <p>Addnl Data: SCHWITZER A H, HEWEL M, SCHMID E, LAUDONIA I</p>	<p>(I) 0.5-95% semicrystalline linear PA;          (II) 5-99% branched graft PA;          (III) 0.5-40% amorphous PA; and          (IV) 0-2% carbon black.</p> <p>(i) has a styrene-maleimide basic structure of formula (1) and/or (ii) is produced by hydrolytic polymerization of amino acids and/or lactams as basic components, with addition, to the melt of these components, of the following branching components (i) 5-150 <math>\mu</math>mole/g polymer of at least one trifunctional monomer, derived from an amine or carboxylic acid monomer, and (ii) 2-100 <math>\mu</math>mole/g polymer of an at least bifunctional monomer, i.e. a carboxylic acid when (i) is derived from an amine or an amine when (i) is derived from a carboxylic acid.</p>
<p><b>NOVELTY</b></p> <p>Molding composition for producing high gloss, rigid polyamide shaped articles comprises 100 parts polyamide (PA) mixture (A); 40-235 parts reinforcing filler (B) and usual PA formulation additives (C).</p> <p><b>DETAILED DESCRIPTION</b></p> <p>Molding composition for producing high gloss, rigid polyamide shaped articles comprises 100 parts polyamide (PA) mixture (A); 40-235 parts reinforcing filler (B) and usual PA formulation additives (C).</p> <p>(A) contains, by weight:</p>	<p>  DE 10251294-A+</p>

components.

#### ADVANTAGE

Addition of the graft polymer (III) provides moldings of excellent surface gloss, especially over 75 at angle 60°; also better processing properties; higher flowability; better mechanical properties (particularly in the conditioned state after uptake of moisture); excellent shape stability when warm and only moderate processing temperatures are required.



(I)

$m = 1\text{--}5$ ;  
 $n = 3\text{--}15$ , such that molecular weight of the basic structure is 600-9000;  
X indicates the position of the grafted polyamino acid sidechain  
. An INDEPENDENT CLAIM is also included for shaped articles prepared from the new composition.

#### USE

The composition is used to prepare shaped articles, particularly of large wall thickness, by injection molding; (blow) extrusion; gas/water internal pressure techniques; deep drawing etc., for use in industrial, optical, electrical or sanitary applications, or as automobile

#### EXAMPLE

A molding composition comprised (by weight) 6.2 parts PA6v (a branched polyamide (PA) described in EP 409115); 25.4 parts Grilon A28 (linear, partially crystalline PA6); 16.2 parts Grivory G21 (amorphous co-PA); 50 parts glass fiber; 1.5 parts PA6/carbon black (25%) masterbatch, and 0.7 parts additives. PA6v was prepared by reacting oligomeric styrene-maleic anhydride copolymer with caprolactam and tridecylamine. Moldings made from this composition had surface gloss (at 60°) of 80, dry, and 81 after being conditioned according to ISO 1110; contrast 65 and 61 for a similar composition containing only Grilon A28.

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TECHNOLOGY FOCUS

Polymers - Preferred Composition: (A) comprises 0.5-80, preferably 1-64.5, wt. % (I); 15-98.5, preferably 18-79.5, wt.% (II); 1-35, preferably 20-35, wt.% (III) and 0-2, preferably 0.5-2, wt.% carbon black. At processing temperature it has melt viscosity, at shear rates 200 and 1000 reciprocal s, of below 300 and below 150 Pa.s, respectively. Typical (C) are modifiers of impact strength; heat or processing stabilizers, or lubricants. Preferred Materials: Typical (I) are PA 6, 66, 12, 6T, 6T12 and/or 12T, optionally with terephthalic acid (T) partly replaced by isophthalic acid (I) or adipic acid. (II) is derived from PA 6, 11 or 12 and has more than 3 arms. It has relative viscosity (1% in sulfuric acid at 23°C) below 2.2 and at 30 degC above its melting point has melt viscosity (at shear rate 500 reciprocal s) below 50 Pas. It may include a lubricant, e.g. long-chain alkylene, and has a molecular weight comparable with (I). (III) is particularly PA 6/6T or PAMXD/MXDT/6I/6T.

Inorganic Chemistry - Preferred Materials: Typical (B) are glass or carbon fibers; talc; mica; kaolin and nanocomposites.  
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